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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,557	01/13/2004	Carl Brent Smith	297/201	2669
25297	7590	03/03/2006	EXAMINER	
JENKINS, WILSON & TAYLOR, P. A. 3100 TOWER BLVD SUITE 1200 DURHAM, NC 27707			EINSMANN, MARGARET V	
			ART UNIT	PAPER NUMBER
			1751	

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,557

Applicant(s)

SMITH ET AL.

Examiner

Margaret Einsmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-159 is/are pending in the application.
- 4a) Of the above claim(s) 90-159 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-89 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Applicant's election of Group I in the reply filed on 12/12/05 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 90-159 are withdrawn from consideration.

Claims 1-89 are being examined in this action.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-89 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite because the metes and bounds of the following terms cannot be determined:

“polyelectrolyte” appears to mean an electrolyte with more than one ionic charge. Is trisodium phosphate included in the term?

“polycation” includes a compound formed by reacting a polymer with a cationizing agent (claim 3) but it is not clear what else it includes. Does it include any ionic species comprising more than one cationic charge? If the term is limited to cationic polymers, claim 1 needs to be clarified.

“protic acids” Which acids are included in this term?

“reactive anion” Which anions are included in this term? This term is indefinite wherever it appears.

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Why is cationized chitosan referred to as a polycation when it is not a cation but a cationized polymer?

Regarding claim 10 What is being compared? What is the wrinkle recovery improved over? And what test is used. This claim is vague and indefinite since it does not include a standard of measurement.

Regarding claims 32 and 57, Chlorosulfonic acid is not a haloacetic acid.

Regarding claim 42, it is not properly dependent on claim 40 because it includes the process wherein there is no polycation present.

Regarding claim 46, it is not clear how this claim further limits claim 40 which already defines a pad-batch method.

Regarding claim 63©, one is treating anionic material with a cationizing agent. How does one end up with a treated anionic material? Is not the treated material cationic?

Regarding claims 51 and 83:

a) what is meant by the term "reaction anion adduct?"

b) the halogenated-hydroxyalkyl metal alkyl halides are selected from two compounds that do not comprise metals (also claims 15, 50,55,81, 87)

c) there is no antecedent basis for the recitation of "reactive anion" on line 6 and, d) said "reactive anion" is selected from the group consisting of chloroacetic acid and chlorosulfonic acid. Both of these are compounds, not anions.

Regarding claim 89, it is not clear how this claim further limits claim 63 which already defines a pad-batch method.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper et al., US 5,951,719. Cooper et al. teaches applying to anionic textile materials, including 100% cellulosic including cotton (col 2 lines 22-23) cationic acrylamide polymers which have been reacted with glyoxal. See example 1 in col 4 and 5. Also taught is the formation of the cationic polymer reading on step (a) in claim 11. Alternatively, a dyed textile is first coated with an anionic polymer, the coated fabric is dried, then the anionic polymer coated fabric is coated with a cationic polymer and then dried. See col 3 line 63 to col 4 line 2. See also example 3 in col 5.

Claims 11, 12, 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Elizer, US 3,676,423.

Elizer's example 1 discloses the steps as claimed in applicant's claim 11 as follows:

Elizer reacts a cellulose polymer with a cationizing agent, 2-chloroethyldiethylamine hydrochloride to form a cationized polymer (col 4 lines 67 and 68) reading on applicant's step 11(a)

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Elizer reacts a fibrous material (cellulose) with a reactive anion (propane sultone) thus forming an anionic fibrous material (col 4 lines 63-66) thus reading on applicant's step 11 (b)

The two above products are combined reading on applicant's 11 (c).

Regarding claims 12+, Elizer mixes a polymer with a cationizing agent to form a reaction mixture (col 4 lines 67-68); adds an aqueous alkaline solution (NaOH) to the reaction mixture (col 4 lines 70-75), applies the mixture uniformly (which is functionally equivalent to stirring). The temperature rises to 101degrees C. (as claimed in claim 19) which is the heating step, and the cloth is submerged for 22 hours without adding heat which means that the temperature will cool to ambient temperature, which is about 25 degrees C. as claimed in claim 20 Then HCl, a protic acid is added bringing the pH to 7.0 (reading on applicant's claim 21.

Claims 1-5,6-9 40-42, 45-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al., Textile Res. J (1998)

Kim teaches the formation of cationic chitosan by reacting chitosan with glycidyltrimethylammonium chloride, and treating cotton material with said cationized chitosan. See page 428 column 2, and page 429, col 1 under "Antimicrobial Finish of Cotton." Since cotton is an anionic fiber material, and cationized chitosan is a cationic polysaccharide, all of the imitations of claims 1-5 and 7-9 are met. Regarding claims 40-42, 45-47, see above section of page 429.

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Claims 1,2,5,7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Perrier et al., US 4,067,689. An anionic fibrous material, cotton, is treated with a polycation. See equation col 2 lines 15-27 where cotton is reacted with a reagent comprising two cationic groups to form a crosslinked cotton having improved wet and dry recovery angles than the untreated cotton. See col 1 lines 57-61.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Login, US 6,336,943.

Kim is applied as set forth above as disclosing the formation of cationic chitosan by reacting chitosan with glycidyltrimethylammonium chloride, and treating cotton material with said cationized chitosan. See page 428 column 2, and page 429, col 1. He differs from the instant claims in that he does not treat cotton that has been reacted to further increase its anionic charge.

Login et al. teaches derivitizing cotton so that it exhibits a permanent anionic charge. Login teaches that the treatment is useful in facilitating the application of cationic fabric softeners and biocides. See abstract and col 10 line 28.

It would have been obvious to the chemist having skill in the art at the time the invention was made to apply the cationic chitosan of Kim to the anionic derivitized

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cotton of Login in place of the ordinary cotton used by Kim because the anionic cotton has reactive sites which will hold onto the cationic chitosan , which is a biocide, by the formation of ionic bonds, a fact that is well known to a chemist, and also because Lim states that the cationic chitosan lacks laundry durability on cotton, and Login teaches that the derivatized cotton increases the amount of cationic softener and/or biocide absorbed on the cotton. Therefore a chemist would expect that the ionic bonding would improve the bonding or holding power of the cationic chitosan to cotton.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret Einsmann whose telephone number is 571-272-1314. The examiner can normally be reached on 7:00 AM -4:30 PM M-W and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on 571-272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/1/06

A handwritten signature in black ink, appearing to read "Margaret Einsmann". The signature is written in a cursive, flowing style.

Margaret Einsmann
Primary Examiner
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